



February 2024

James Carbajal
Carbajal Auto Sales
8581 Rosemary Street
Commerce City, Colorado 80022

**RE: Carbajal Auto Dealership / Traffic Generation Analysis
Commerce City, Colorado**

Dear James,

SM ROCHA, LLC is pleased to provide traffic generation information for the development entitled Carbajal Auto Dealership. This development is located on the southwest corner of Rosemary Street and E 86th Avenue in Commerce City, Colorado.

The intent of this analysis is to present traffic volumes likely generated by the proposed development, provide a traffic volume comparison to the existing land use, and consider potential impacts to the adjacent roadway network.

The following is a summary of analysis results.

Site Description and Access

Land for the development is currently occupied by a single-family home and surrounded by a mix of residential, industrial, and institutional land uses. The proposed development is understood to redevelop the existing 790-square-foot building into a used car dealership.

Proposed access to the development is provided via one full-movement access onto E 86th Avenue (referred to as Site Access). It is noted that an additional access drive is also being proposed onto Rosemary Street. However, this access is expected to be an emergency-only access.

General site and access locations are shown on Figure 1.

A site plan, as prepared by Raptor Civil Engineering, is shown on Figure 2. This plan is provided for illustrative purposes only.



Figure 1
SITE LOCATION

CARBAJAL AUTO DEALERSHIP
Traffic Generation Analysis

SM ROCHA, LLC
Traffic and Transportation Consultants



Vehicle Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, were applied to the existing and proposed land uses in order to estimate the average daily traffic (ADT) and peak hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from point of origin to point of destination.

Table 1 presents average trip generation rates for the existing and proposed development areas. Use of average trip generation rates presents a conservative analysis. ITE land use codes 210 (Single-Family Detached Housing) and 841 (Automobile Sales (Used)) were used for analysis because of their best fit to the existing and proposed land uses.

Table 1 – Trip Generation Rates

ITE CODE	LAND USE	UNIT	TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
210	Single-Family Detached Housing	DU	9.43	0.18	0.53	0.70	0.59	0.35	0.94
841	Automobile Sales (Used)	KSF	27.06	1.62	0.51	2.13	1.76	1.99	3.75

Key: KSF = Thousand Square Feet Gross Floor Area. DU = Dwelling Units.
Note: All data and calculations above are subject to being rounded to nearest value.

Table 2 summarizes the projected ADT and peak hour traffic volumes likely generated by the land use area proposed and provides comparison to traffic volume estimates for the existing land use.

Table 2 – Trip Generation Summary

CODE	LAND USE	SIZE	TOTAL TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
<u>Site Development - Existing</u>									
210	Single-Family Detached Housing	1 DU	9	0	1	1	1	0	1
<i>Existing Total:</i>			9	0	1	1	1	0	1
<u>Site Development - Proposed</u>									
841	Automobile Sales (Used)	0.8 KSF	21	1	1	2	1	2	3
<i>Proposed Total:</i>			21	1	1	2	1	2	3
<i>Difference Total:</i>			12	1	0	1	0	2	2

Key: KSF = Thousand Square Feet Gross Floor Area. DU = Dwelling Units.
Note: All data and calculations above are subject to being rounded to nearest value.

As Table 2 shows, the proposed development area has the potential to generate approximately 21 daily trips with 2 of those occurring during the morning peak hour and 3 during the afternoon peak hour. Compared to the existing land use, this represents a potential increase in site traffic generation of approximately 12 daily trips with 1 of those occurring during the morning peak hour and 2 during the afternoon peak hour.

Adjustments to Trip Generation Rates

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

Development Impacts

As Table 2 shows, there is an increase in peak hour traffic volumes anticipated for the proposed redevelopment. However, these volumes are considered minor and are not likely to negatively impact operations of E 86th Avenue, Rosemary Street, nor other adjacent roadways or intersections.

It is noted that a traffic signal warrant analysis was recently conducted at the intersection of E 84th Avenue and Rosemary Street, approximately one-quarter mile south of the proposed development, as part of the Lucky 22 Offices Traffic Generation Analysis¹. This analysis concluded that consideration for traffic signal control was not warranted, pursuant to Warrant 1 – Eight Hour Vehicular Volume, Warrant 2 – Four-Hour Vehicular Volume, and Warrant 3 – Peak Hour from the latest Manual on Uniform Traffic Control Devices (MUTCD), in the long-term future build-out scenario of the overall area.

Considering the minor change in site-generated trips resulting from Carbajal Auto Dealership, it is concluded that the previous traffic signal warrant remains valid, and a traffic signal is not warranted at the E 84th Avenue and Rosemary Street intersection, from a vehicle volume perspective.

¹ Lucky 22 Offices: Traffic Generation and Warrant Analysis, SM ROCHA, LLC, February 2023.

Conclusion

This analysis assessed traffic generation for the Carbajal Auto Dealership development, provided a traffic volume comparison to the existing land use, and considered potential impacts to the adjacent roadway network.

It is our professional opinion that the proposed site-generated traffic resulting from the redevelopment is expected to create no negative impact to traffic operations for the surrounding roadway network and proposed site access, nor at the Rosemary Street intersection with E 86th Avenue. Analysis of site-generated traffic concludes that proposed development traffic volumes are minor.

We trust that our findings will assist in the planning and approval of the Carbajal Auto Dealership development. Please contact us should further assistance be needed.

Sincerely,

SM ROCHA, LLC
Traffic and Transportation Consultants



Megan Bock, EIT
Traffic Engineer



Fred Lantz, PE
Traffic Engineer